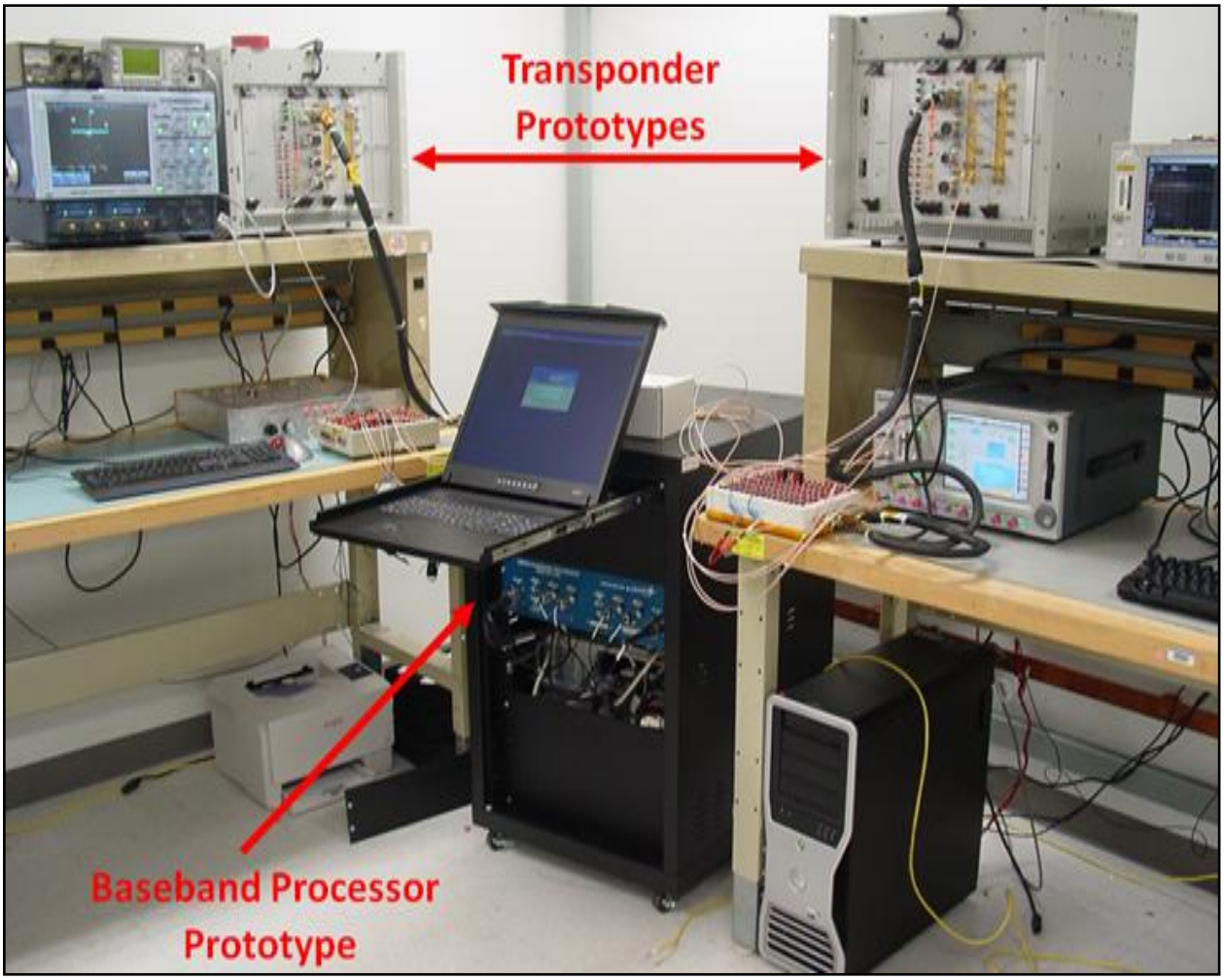
ORION
CREW EXPLORATION VEHICLE

WEEKLY ACCOMPLISHMENTS

08.20.10

The Orion Crew Module ground test article recently moved from the fabrication building to the proof pressure test building at the Michoud Assembly Facility in New Orleans, Louisiana. The next step is to install the data acquisition system and attach the hatch cover. A dry run to test the compatibility of the system and hardware will be conducted prior to the proof pressure test. The proof pressure test will provide engineers with their first look at the behavior and stresses of the new structure.



The first two Orion prototype Transponders and the first Orion prototype Baseband Processor were recently delivered to the Lockheed Martin Newtown, PA, facility for integration testing. These units were successfully integrated and their modes of operation were configured. The test configuration allowed one Transponder to send its RF signal to the other over a simulated RF path. The received signal was demodulated and the resulting soft-decision symbols were interfaced with the Baseband Processor. Successful decoding and unwrapping of CCSDS protocol layers was performed using three different operating modes. Tests completed included acquisition, tracking, symbol error rate, and decoded frame error rate.

The prototype units are first-of-their-kind, implementing new features and advanced capabilities. The tests have confirmed basic performance and integration goals. With the confidence in the units' performance gained from these tests, they will next be sent to the Electronic Systems Test Laboratory (ESTL) at the Johnson Space Center (JSC) for more comprehensive tests, including those involving other NASA communication system elements.